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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,460	06/22/2006	Toshiyuki Zento	1011350-000375	3318

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EXAMINER	
MCNALLY, DANIEL	
ART UNIT	**PAPER NUMBER**
1791	

NOTIFICATION DATE	DELIVERY MODE
02/24/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

Office Action Summary	Application No.	Applicant(s)	
	10/584,460	ZENTO ET AL.	
	Examiner	Art Unit	
	DANIEL MCNALLY	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 November 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings were received on 7/22/2006. These drawings are approved.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "a thermoplastic resin composition (A) containing a styrene type elastomer and a polyolefin type resin," it is unclear that the language of the claim requires a mixture. In light of the applicant's arguments (page 8 submitted 11/4/2008), the claim is interpreted to require a mixture of a styrene type elastomer and a polyolefin type resin, as intended to be required by the applicant. It is recommended that the language --a mixture of-- be inserted between "containing" and "a styrene" in line 3 of claim 1 to overcome the rejection.

Claim 1 lines 15 and 16 recite "wherein the thin tube comprises *one* of the tubular body (a) *and* the tubular body (b), and the thick tube comprises the other of the tubular body (a) *and* the tubular body (b)," and it is unclear if the thin tube comprises one of (a) or (b), or if the claim requires the tube requires one of (a) and (b). It is assumed the applicant wants to claim the thin tube is (a) or alternatively (b), and the thick tube is the

other of (a) or (b), therefore it is recommended replacing “and” with --or-- in both instances.

Claims 2-10 depend from claim 1 and are rejected for the same reasons expressed above.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-5, and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Savitski et al. (US2002/0100540, of record, previously cited, herein “Savitski") in view of Ruotsalainen (US2002/0179233, of record, previously cited), and Woo et al. (US5356709, of record, previously cited, herein “Woo”).

Savitski discloses a method of joining tubes. The method comprises providing a first tube (42) and a second tube (40), wherein the tubes comprise laser transmitting thermoplastic materials such as polystyrenes and polyolefins, an absorbent material (44) is provided between the tubes as shown in Figures 3, 4, 6, and 7, the absorbent material comprises carbon black which is the same material used in the applicant’s invention and carbon black intrinsically can absorb wavelengths of 700-2500nm, the tubes are connected as shown in the Figures, a laser beam is irradiated onto the absorbent material to form a bond between the tubes (paragraph 0059, 0061). Savitski is silent as to any relationship of the diameters of the tubes. While Savitski discloses the tubes can be formed materials such as polyolefin and polystyrene, Savitski is silent as to forming a tube that comprises both polyolefin and styrene type elastomer.

Ruotsalainen discloses a method of transmission laser welding. The method comprises fitting two plastic parts together, wherein the parts maybe a tubular shell and an insert that can be partially inserted into the tubular shell, the shell and insert are assembled together with an interference fit, wherein the interference fit keeps the shell and insert together without a holding or clamping means, the interference fit is a result of the insert having an outside diameter that is superior to the inner diameter of the shell, laser is irradiated onto the interface between the shell and insert to form a bond (paragraphs 0008-0011, 0013, 0016 and 0020). The interference fit ensures good contact is maintained between the parts being welded so that no voids are formed, and improves the welding of parts with different stiffness. It is within the skill of one of ordinary skill in the art to ensure while forming the interference fit that the outside diameter of the insert is not so large that it no longer fits within the inside diameter of the shell. One of ordinary skill in the art would have readily appreciated selecting a shell and insert with an interference fit so that the ratio (outside diameter of insert/ inside diameter of shell) is an optimized value to ensure there is an interference fit (ratio greater than 1) but not so large that the parts do not fit together (ratio less than 1.25) as the optimized ratio would have been found using normal experimentation by one of ordinary skill.

Woo discloses a material for making medical grade tubes. The tube comprises an outer layer comprising a blend of polypropylene copolymer and styrene-ethylene-butylene-styrene copolymer (SEBS) or “styrene type elastomer”, a tie layer, and a core layer comprising a blend of polyamide and ethylene-vinyl acetate (column 1, line 39 -

column 2, line 20). The use of a multilayer construction for the tube allows the tube to be sufficiently flexible, translucent, and able to bond to a polyolefin surface.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Savitski by fitting the inside diameter of the outer tube and the outer diameter of the inner tube with an interference fit as taught by Ruotsalainen in order to ensure sufficient contact is maintained between the welded parts so that no voids are formed in the weld, and to modify the method of Savitski by forming one of the tubes with a blend of styrene elastomer and polyolefin as taught by Woo in order to provided improved flexibility, transparency and compatibility. As to the claimed storage elastic modulus, the tube of Savitski as modified by Woo comprises a styrene type elastomer and a polypropylene, and the tube of Savitski can be a polyolefin such as polypropylene or polyethylene. As these materials are the same/similar to the materials used in the applicant's specification which the applicant discloses has claimed storage elastic modulus, it is intrinsic that the disclosed materials of Savitski and Woo have the same storage elastic modulus as the invention absent a specific showing otherwise as the office cannot test for these specific properties.

With regard to claim 2, Woo teaches using a multilayer construction.

With regard to claim 3, Savitski discloses the tube material should be sufficiently clear to afford visual inspection of the underlying bond (paragraph 0059). Having a haze value that is less than 40% is intrinsic of the materials used to form the tubes.

With regard to claim 4, Woo teaches the SEBS material is present in the amount of 1-60 % by weight.

With regard to claim 5, Savitski discloses the tube can be 100% polyolefin.

With regard to claim 9, Savitski discloses the polyolefin may comprise polypropylene or polyethylene resin.

With regard to claim 10, Savitski discloses the absorbent is carbon black.

6. Claims 1 and 3-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Savitski in view of Ruotsalainen, and Hatakeyama (US6391972, newly cited, herein "Hatekeyama").

Savitski discloses a method of joining tubes. The method comprises providing a first tube (42) and a second tube (40), wherein the tubes comprise laser transmitting thermoplastic materials such as polystyrenes and polyolefins, an absorbent material (44) is provided between the tubes as shown in Figures 3, 4, 6, and 7, the absorbent material comprises carbon black which is the same material used in the applicant's invention and carbon black intrinsically can absorb wavelengths of 700-2500nm, the tubes are connected as shown in the Figures, a laser beam is irradiated onto the absorbent material to form a bond between the tubes (paragraph 0059, 0061). Savitski is silent as to any relationship of the diameters of the tubes. While Savitski discloses the tubes can be formed materials such as polyolefin and polystyrene, Savitski is silent as to forming a tube that comprises both polyolefin and styrene type elastomer.

Ruotsalainen discloses a method of transmission laser welding. The method comprises fitting two plastic parts together, wherein the parts maybe a tubular shell and an insert that can be partially inserted into the tubular shell, the shell and insert are assembled together with an interference fit, wherein the interference fit keeps the shell

and insert together without a holding or clamping means, the interference fit is a result of the insert having an outside diameter that is superior to the inner diameter of the shell, laser is irradiated onto the interface between the shell and insert to form a bond (paragraphs 0008-0011, 0013, 0016 and 0020). The interference fit ensures good contact is maintained between the parts being welded so that no voids are formed, and improves the welding of parts with different stiffness. It is within the skill of one of ordinary skill in the art to ensure while forming the interference fit that the outside diameter of the insert is not so large that it no longer fits within the inside diameter of the shell. One of ordinary skill in the art would have readily appreciated selecting a shell and insert with an interference fit so that the ratio (outside diameter of insert/ inside diameter of shell) is an optimized value to ensure there is an interference fit (ratio greater than 1) but not so large that the parts do not fit together (ratio less than 1.25) as the optimized ratio would have been found using normal experimentation by one of ordinary skill.

Hatakeyama discloses a method of molding a plastic article. The method comprises blending a styrenic thermoplastic and a polyolefin. The stryenic thermoplastic can be styrene-butadiene-styrene block copolymer (SBR) or styrene-isoprene-styrene block copolymer (SIS) or styrene-ethylene-butylene-styrene block copolymer (SEBR). The polyolefin can be polyethylene or polyproplylene (column 1, line 46 - column 2, line 13). The blend of the styrenic thermoplastic and a polyolefin creates a plastic article that has wet feel and good touch.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Savitski by fitting the inside diameter of the outer tube and the outer diameter of the inner tube with an interference fit as taught by Ruotsalainen in order to ensure sufficient contact is maintained between the welded parts so that no voids are formed in the weld, and to modify the method of Savitski by forming one of the tubes with a blend of styrenic thermoplastic and a polyolefin as taught by Hatakeyama in order to improve the wet feel and touch of the plastic tube. As to the claimed storage elastic modulus, the tube of Savitski can be a polyolefin such as polypropylene or polyethylene, and the tube of Savitski as modified by Hatakeyama comprises a blend of polyethylene or polyproplylene with styrene type elastomer comprising an aromatic vinyl polymer block such as polystyrene and a vinyl polymer block such as polyisoprene or polybutadiene. The applicant's specification discloses materials that have a storage elastic modulus as claimed, and the materials disclosed by Savitski and Hatakeyama are the same/similar to the materials disclosed in the applicant's specification; therefore it is intrinsic that the materials of Savitski and Hatakeyama have the claimed storage elastic modulus absent a specific showing otherwise as the office cannot test for these specific properties.

With regard to claim 3, Savitski discloses the tube material should be sufficiently clear to afford visual inspection of the underlying bond (paragraph 0059). Having a haze value that is less than 40% is intrinsic of the materials used to form the tubes.

With regard to claim 4, Hatakeyama discloses the ratio of styrenic thermoplastic elastomer to polyolefin can be from 100:0 to 1:100.

With regard to claim 5, Savitski discloses the tube can be 100% polyolefin.

With regard to claims 6-8, Hatakeyama discloses the styrenic thermoplastic elastomer comprises polystyrene which is an aromatic vinyl polymer block, and polybutadiene or polyisoprene which is a vinyl polymer block. The polyisoprene would have contents of 1,2-bond unit and 3,4 bond unit both in the range of 10-75 mol % and have hydrogenated more than 70% of a carbon-carbon double bonds.

With regard to claim 9, Savitski discloses the polyolefin may comprise polypropylene or polyethylene resin.

With regard to claim 10, Savitski discloses the absorbent is carbon black.

Response to Arguments

7. Applicant's arguments with respect to claim 1-10 have been considered but are moot in view of the new ground(s) of rejection. Applicant the previous cited art taught using a copolymer rather than a blend. Newly cited Hatakeyama discloses using a polyolefin blended with a styrene type elastomer.

Applicant argues Savitski does not explicitly recite the polyolefin has the claimed storage elastic modulus. It is noted the applicant recites in claim 9 that the polyolefin is polypropylene or polyethylene, which are disclosed in the specification to have the claimed storage elastic modulus. Savitski teaches the tube can be polypropylene or polyethylene, and therefore the tube would intrinsically have the same storage elastic modulus as claimed.

Applicant ague there is no motivation to combine the teachings of Savitski with the teachings of Ruotsalainen. Applicant has provided no evidentiary support that the

interference fit would not allow a sufficient butt weld joint to be formed. Ruotsalainen's interference fit also contributes other improvements beside not requiring clamping, the interference fit ensures no voids are formed in the weld.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL MCNALLY whose telephone number is (571)272-2685. The examiner can normally be reached on Monday - Friday 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel McNally/ /John L. Goff/

Examiner, Art Unit 1791 Primary Examiner, Art Unit 1791

/DPM/
February 17, 2009